IN THE CLAIMS:

1. (Currently Amended) A method comprising:

infiltrating a solution containing a plurality of carbon aerogel precursors ~~wherein the ratio of hydroxylated benzene compound to catalyst is less that 1000~~ into a pre-formed polymer foam, or fiber-mat,

allowing said solution to gel such that it encapsulates at least part of the pre-formed polymer foam or fiber-mat to form a gelled composite,

drying the gelled composite to form a dried composite such that the surface tensile forces are reduced, and

pyrolyzing the dried composite wherein the preformed polymer foam or fiber-mat and the carbon aerogel decompose simultaneously such that they remain essentially in contact at their interfaces to form a monolithic glassy carbon material ~~with a density less than 300 g/cc~~.

2-3 (canceled)

4. (Previously presented) The method of Claim 1, wherein allowing said solution containing a plurality of carbon aerogel precurors to gel is carried out at a temperature of 80°C and a time period of 110 minutes.

5-7 (Canceled)

8. (Previously presented) The method of Claim 1, wherein pyrolyzing the dried composite is carried out in a furnace in the temperature range of 700 to 1100°C and for a time period of 8 to 12 hours.

9-17 (Canceled)

18. (Previously presented) The method of Claim 1, wherein said drying is carried out by supercritical carbon dioxide exchange.

19. (Canceled)